

EXHIBIT A

Scope of Work

PURPOSE

This Agreement is for the Contractor to provide technical support necessary for the California Energy Commission (Energy Commission) staff to perform Integrated Energy Policy Report (*IEPR*) cycle work in two major areas:

- a. The Assessment of Natural Gas Supply to 2018; and
- b. Understanding Natural Gas Market Uncertainties.

The Contractor shall provide quantitative evaluation of uncertainty. The Energy Commission staff will gain a necessary tool to evaluate and identify the range of uncertainty that now exists in the natural gas market.

The Contractor shall provide several natural gas supply cost curves, from which the Energy Commission staff can extract production cost values.

To provide the natural gas work for the 2010 *IEPR Update* and 2011 *IEPR*, the Contractor shall complete the following:

Task 1: Under the direction of the Energy Commission staff, starting with the Baker Institute's base case, the Contractor shall modify the model's structure to meet the specific requirements of the Energy Commission. These modifications will include the re-construction of the western United States and western Canada.

The Energy Commission shall provide the Contractor with the Energy Commission's base case (.mkp) file used in the Energy Commission's 2007 *Natural Gas Market Assessment*. The structure contained in this case will serve as a prototype in the reconstruction.

Task 2: The Contractor shall:

- a. Develop reference quantities and reference prices for all the new demand nodes in the western United States and in western Canada.
- b. Develop all associated elasticities for the demand nodes of the western United States and western Canada.
- c. Develop all associated local distribution cost for all local transportation in the western United States and in western Canada.

- d. Upload all data into the newly re-constructed case. This case may become the Energy Commission's 2010 Integrated Energy Policy Report Update natural gas base case (CEC_WGTM_IEPR2010), and a subsequent re-constructed case may become the Energy Commission's 2011 IEPR natural gas base case.
- e. Deliver the .mkp file of CEC_WGTM_IEPR2010 (and subsequent .mkp file for 2011 IEPR) to Energy Commission staff.

DELIVERABLES: A .mkp file of CEC_WGTM_IEPR2010 (and subsequent .mkp file for 2011 IEPR) to Energy Commission staff.

DUE DATES: February 15, 2010 for the 2010 IEPR Update
January 15, 2011 for the 2011 IEPR

Task 3: After the Energy Commission staff completes its review of the case, the Contractor shall run and produce a new market equilibrium case of natural gas supply and demand; CEC_WGTM_IEPR2010 (and subsequent case for 2011 IEPR). Designated Energy Commission staff shall specify the criteria and conditions necessary for reaching the new market equilibrium.

The Contractor shall:

- a. Develop a series of final price and quantity reports for review by the Energy Commission staff, who will provide the format of reports;
- b. Provide the Energy Commission staff with the CEC_WGTM_IEPR2010 case with the new market equilibrium in a .mkp file (and subsequent case for 2011 IEPR).

DELIVERABLES: A CEC_WGTM_IEPR2010 case contained within an .mkp file (and subsequent case for 2011 IEPR) to Energy Commission staff.

DUE DATES: March 1, 2010 for the 2010 IEPR Update
February 1, 2011 for the 2011 IEPR

Task 4: The Contractor shall:

- a. Present and defend assumptions, inputs, and results during Energy Commission sponsored workshops and hearings for the 2010 IEPR Update and 2011 IEPR.
- b. Generate a draft written report describing Demand, Supply, Infrastructure, Price, and Liquefied Natural Gas that may become part of the 2010 IEPR

Update and the 2011 IEPR. The Energy Commission shall provide a sample and a format for the reports.

DELIVERABLES: A Draft written report describing Demand, Supply, Infrastructure, Price, and Liquefied Natural Gas that may become part of the 2010 IEPR Update and the 2011 IEPR to Energy Commission staff.

DUE DATES: April 1, 2010 for the 2010 IEPR Update
February 15, 2011 for the 2011 IEPR

Task 5: The Contractor shall generate a final written report describing Demand, Supply, Infrastructure, Price, and Liquefied Natural Gas that may become part of the 2010 IEPR Update and the 2011 IEPR.

DELIVERABLES: A Final written report describing Demand, Supply, Infrastructure, Price, and Liquefied Natural Gas that may become part of the 2010 IEPR Update and the 2011 IEPR to Energy Commission staff.

DUE DATES: May 1, 2010 for the 2010 IEPR Update
March 1, 2011 for the 2011 IEPR

Task 6: Using the proprietary software MarketBuilder as the main analytic tool, the Contractor shall conduct modeling and analysis to capture regional and international events which have disrupted or altered the natural gas marketplace with respect to demand, supply, price, and infrastructure. Examples of such events include the earthquake and tsunami in Japan, and the pipeline explosion and subsequent investigation of the events at San Bruno.

DELIVERABLES: Ongoing analysis and technical support with regional and international events which affect the natural gas market.

DUE DATES: November 15, 2011 for the 2011 IEPR

Task 7: Using the proprietary software MarketBuilder as the main analytic tool, the contractor shall conduct modeling and analyses to capture state and national policy changes that occur following the end of the 2011 IEPR. This includes but is not limited to developments in the GHG regulatory environment and changes in the environmental restrictions on shale gas development and hydraulic fracturing.

DELIVERABLES: Ongoing analysis and technical support with state and national policies and their effects on the natural gas market.

DUE DATES: November 15, 2011 for the 2011 IEPR